

A STUDY OF NEW PATIENTS ATTENDING THE ACCIDENT AND EMERGENCY DEPARTMENT OF THE ROYAL VICTORIA HOSPITAL, BELFAST, from 25th January, 1970, to 31st January, 1970

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INTRODUCTION

IN VIEW of the great paucity of information about the work of accident and emergency departments, it was decided to undertake a detailed study of all new patients attending the accident and emergency department of the Royal Victoria Hospital over a period of one week. The aims were:

- (a) to make a critical analysis of the work of the department;
- (b) to provide figures for planning and development
- (c) to estimate the value of accident and emergency records for clinical research.

METHODS

Population studied

From 25th January, 1970, to 31st January, 1970, 1,007 case papers were prepared for new patients. Of these 5 walked out before examination, 2 were discovered to be re-attending who had mistakenly asked for new papers, and 8 were transferred to another department of the hospital without examination (mostly to the eye, ear, nose and throat departments of the hospital). This leaves 992 patients who form the basis of the study.

Recording

During the week chosen, receptionists and doctors were asked to enter all details with special care. After typed copies had been made for the continued care of the patients, 29 items were coded on the original documents. Punch cards were prepared from the coded column and sorted mechanically. Originally all tables were prepared subdivided both by sex and by the area where the patient was examined. Where no important difference was seen the subgroups were later amalgamated.

Examination areas

Patients were seen in two distinct areas. The more serious cases (those being assessed to see whether admission was necessary) were seen in an area which we call the ambulance area. The area for the less serious cases is called the walking area.

RESULTS

Age and sex (Table I)

In the ambulance room, the proportion of men in the groups above 65 years of age was much higher than corresponding groups for the Northern Ireland

population. For women patients this over representation of the elderly was not obvious till 75 years old and above. By contrast in the walking area the youngest groups were over represented with the whole population, and the elderly were markedly under represented, this being evident above 55 years of age.

TABLE I
Percentage distribution of 992 patients by sex, examination area and age, compared with Northern Ireland population of 15 years old and over

	PERCENTAGES					
	<i>Ambulance Area</i>		<i>Walking Area</i>		<i>N.I. Population</i>	
	M	F	M	F	M	F
15-24	22.0	22.9	42.7	32.2	23.3	21.2
25-34	12.5	11.8	23.8	19.7	17.1	16.0
35-44	10.4	11.0	14.5	14.0	16.4	15.8
45-54	14.5	13.5	7.8	16.4	16.2	15.6
55-64	13.8	12.7	7.4	10.6	13.9	14.4
65-74	19.3	10.2	3.4	4.3	8.8	10.8
75-84	4.9	13.6	0.2	2.9	3.5	5.1
85+	2.8	4.2	0.2	-	0.7	1.1
Total Percentages	100.2	99.9	100.0	100.1	99.9	100.0
Total Numbers	151	123	479	239	501,500	551,500

Home address

Greater Belfast was subdivided into 5 areas – central, north, south, east and west. Central consisted of postal districts 1-3, east of postal districts 4-6 with Holywood and Dundonald, south postal districts 7-10 and Dunmurry, west postal districts 11-13 and north postal districts 14-15 with Glengormley and Carnmoney.

Ambulance area. Only 0.4% of patients had home addresses in central Belfast – this is almost entirely a non-residential area. 32.9% of patients had home addresses in West Belfast – a district which is both highly populated and close to the hospital. East Belfast, though across the river Lagan, and having the Ulster Hospital within its area, accounted for 23.3% of the patients. North Belfast, which includes Whiteabbey Hospital and the Mater Infirmorium Hospital, accounted for 20.9% of patients. Only 13.1% came from South Belfast. This reflects both its lower population and the presence of the Belfast City Hospital. 3.9% of patients came from Co. Antrim, 1.5% from Co. Down and in 5% the home address was further afield.

Walking area. 49.0% of patients came from the adjacent area of West Belfast, 19.5% from North Belfast, 11% from East Belfast and 8.4% from South Belfast. Proximity naturally affects walking patients much more than ambulance patients.

Location of General Practitioner's Surgery

Figures were extracted for Belfast, Co. Antrim, Co. Down, Co. Armagh and

elsewhere. Belfast was subdivided into an area immediately adjacent to the hospital (postal districts 11 and 12) and the rest of Belfast.

The total number of practices in each area was counted, and the number of these practices from which patients attended during the week. The percentage of practices in each area from which patients attended was worked out. In this one week, patients were received from 8.1% of practices in Co. Armagh, from 26.7% of practices in Co. Down, from 52.9% of practices in Antrim and from 86% of practices in Belfast. Patients were received from every practice in Belfast 11 and 12, and from 82% of practices in the rest of Belfast.

It must be understood that this is a classification by the location of the general practitioner's surgery regardless of whether patients were referred by their doctor or attended on their own initiative. Half of those with Co. Down G.Ps. attended on their own initiative, compared with 39.7% from Antrim, 65.8% from Belfast 11 and 12, and 49.2% from the rest of Belfast.

As the patients had been coded by a suitability index this was also analysed by location of G.Ps. surgery. Of cases from Belfast 11 and 12 64.7% were considered as obviously suitable. This compared with 67% from the rest of Belfast, 68.2% of Co. Antrim patients and 73.5% of Co. Down patients. Although the department is used much more by nearby patients and doctors there is no evidence here that it is misused more by those living near.

Transport

In the ambulance area 57.3% of patients came by ambulance, 21.9% by private car, 11% by bus, 6.2% walked in and 3.3% came by taxi.

In the walking area 36% came by private car, 33.7% by bus, 20.8% walked, 4.7% came by ambulance and 4.2% by taxi.

Source

Ambulance area. Here 60% of women and 41.1% of men were referred by their own doctor and 31.8% of men and 19.5% of women came on their own initiative. In all 15.9% of men and 10.6% of women were brought in after a 999 call.

Walking area. From this area 68.5% of men and 62.3% of women came on their own initiative. 25.1% of women and 10.9% of men came from their doctor, and 16.3% of men and 7.5% of women were sent from work.

Specialty

In the ambulance area patients were classified by specialty according to the doctor who made the decision about the disposal of the case. 46.7% of cases were surgical, 44.2% were medical and in 9.1% of cases a registrar of some other specialty was called in to make the decision.

In the walking area nearly all cases were dealt with by house officers. Here the specialty was decided from the diagnosis. It was considered that 88.2% of cases were surgical, 3.6% medical, 5.3% dental and 2.9% were from other specialties, mainly E.N.T. and Dermatology.

Diagnosis

Medical cases. The medical cases in the walking area are ignored, being very few, and an incorrect use of the service. Table II gives the percentage distribution of the 121 medical patients in the ambulance area. By far the largest group was diseases of the cardiovascular system (46.3%). Even if cerebro-vascular disease (9.1%) is subtracted, there were still 37.2% due to heart conditions and 26.4% of the patients had ischaemic heart disease. In an accident and emergency department it is not possible to diagnose all cases immediately and 18.2% had to be given diagnoses like abdominal pain, chest pain, etc.

TABLE II
Percentage distribution of 121 medical patients seen in ambulance area

Diseases of cardiovascular system:		
Ischaemic heart disease	26.4	
Cerebro vascular disease	9.1	
Other cardiovascular diseases	10.8	
		46.3
Diseases of respiratory system		11.6
Self poisoning		6.6
Ill-defined conditions		18.2
All other diagnosis		17.4
		100.1
TOTAL PATIENTS	121	

TABLE III
Analysis of 761 surgical patients by diagnosis

	<i>Ambulance Area</i>		<i>Walking Area</i>	
	M	F	M	F
Trauma	43.0	30.2	82.6	82.2
Superficial Sepsis	1.5	4.8	6.0	9.4
Other	55.5	65.0	11.4	8.4
Total Percentages	100	100	100	100
Total Patients	65	63	431	202

Surgical diagnoses. Table III shows the percentage distribution of surgical cases. It will be seen that accidents accounted for 43 % of men and 30.2% of women with a surgical diagnosis in the ambulance area. The remainder had mainly disorders of the gastro-intestinal tract.

In the walking area approximately 82% of men and women with a surgical diagnosis had had accidents. Superficial sepsis was present in 6% of men and

9.4% of women. The rest were mainly conditions of the musculo-skeletal system like tennis elbow, de Quervain's disease or low back pain.

Disposal

Ambulance area. From this area 49.6% of cases were admitted to the Royal Victoria Hospital and 4.4% to other hospitals. This figure was affected not only by the seriousness of the cases but the availability or otherwise of beds in hospital. As many as 23.4% were sent home and the general practitioner requested to continue caring for them. Of the 12.8% referred to externs, some were cases which should have been sent there in the first place, but many were cases which were very near to needing admission and for whom urgent appointments were made within one or two days.

Walking area. A few cases were admitted from this area (4.4%). Most went back to their general practitioner (52.7%). Of the 30.6% recalled some were for dressings and some for further assessment.

Suitability for Treatment in the Accident and Emergency Department

Table IV has to be taken with caution. The assessments were made on the spot by the doctor handling the case. Most of these were junior doctors. No hard and fast criteria were agreed in advance, so the judgements were very subjective.

TABLE IV
Percentage distribution of 992 patients by examination area and by suitability

	<i>Ambulance Area</i>	<i>Walking Area</i>
Clearly suitable for Accident and Emergency Department	77.0	62.7
Possibly for G.P.		1.5
„ for Factory Medical Department		0.3
„ for Extern	0.7	0.8
„ no examination necessary	1.1	10.0
Clearly for G.P.	10.2	10.7
Clearly for Factory Medical Department		1.9
Clearly for Extern	9.9	3.3
Clearly no medical help needed	0.7	3.8
Missing data	0.4	4.8
Total percentage	100.0	99.8
Total patients	274	718

In the ambulance area it was felt that 9.9% of cases should have been dealt with at extern, and 10.2% by general practitioners. It was accepted that 77.0% of cases were clearly the correct type for this department.

In the walking area where a higher percentage of patients came on their own initiative, 62.7% were accepted as clearly suitable, 10.7% were felt to be cases

which should have gone for attention to their general practitioner. It is noteworthy that in 13.8% probably no examination or treatment was necessary.

DISCUSSION

Most recent reports suggest that the accident and emergency departments are being grossly misused. To evaluate this in relation to this study, it is again wise to separate the ambulance area patients from the walking area. The ambulance area patients can be assessed in two or three ways.

It is sometimes suggested or implied that in an ideal department no patient would be examined unless they had first been seen by their own doctor. By this criterion 41% of men and 60% of women correctly used the service in the ambulance area and 10.9% of men and 25.1% of women correctly used it in the walking area. This does not however stand up to careful examination. Nobody would deny that the 999 calls were correctly brought directly to hospital. And a man at work or on the street who gets a severe chest pain, if he is near a hospital with a good accident and emergency department, should go straight to it.

Of the minor complaints too, is it not correct for a patient with a bad laceration or sprained ankle to go directly to hospital? I can see no benefit to the patient or the medical services in insisting that such patients should first contact their own doctor.

It is not denied that a proportion of the 55.3% who come on their own initiative may be misusing the service. But to my mind, that they come on their own initiative is no automatic proof of misuse.

A more direct indication is given in the suitability ratings. It must be remembered that these were subjective judgements mainly by junior doctors who probably had little first hand experience of general practice. Of ambulance area patients 77% were deemed clearly the work of this department. Roughly 10% were considered patients whose cases should have been dealt with by their G.P. and 10% should have been sent to externs. The remainder were acknowledged as being equivocal cases. These figures would bear out my own impressions from working for 4-5 years in the department. While many of the cases of misuse are among self-referred patients, there are also some general practitioners who misuse the service.

Turning to the walking area patients, here 10% of cases are said to be clearly suitable for their own doctor, and 10% needed no treatment. On cross checking this with the type of case using the department, 3.6% are seen to be medical cases. A good many of these have suddenly developed a rash. If they cannot contact their own doctor they walk into hospital. It is very understandable, but a clear case, I think, of misuse of the hospital.

Of the surgical cases, I would have no hesitation in accepting all the trauma (82%), no matter how trivial. It is impossible that patients should always know when something is trivial and when it is serious. If they are worried they should consult a doctor. And in trauma cases the hospital is the right place to do this if it is not too far away. Superficial sepsis (9.4%) is also very suitably dealt with in hospital. The 8.4% of other cases will include conditions like low back pain, plantar fasciitis, de Quervain's disease, hydrocœle, paraphimosis. Some of this

should have been referred to orthopaedic externs, though in this case I can sympathise with the desire to have cases screened so that all urgent cases may be passed on urgently to the orthopaedic department. Scrutiny of the diagnoses would therefore suggest that in the walking area some 90% of patients are correctly using the service, 5% are equivocal and 5% are definitely misusing the service.

How does one deal with the situation? The remedy, I suggest, lies in the hands of the doctors in the department. The cardinal rule is that a person who misuses the service should get no benefit through so doing. When a doctor sends a patient who quite clearly should have been sent to an extern clinic, no appointment should be made, but the patient returned to the doctor with a request that he make the appointment. When a patient who should have gone to his own doctor comes to hospital, he must always be examined by a doctor. But this doctor will give no treatment and also no information about the findings of his examination except that this is not a hospital case, and he must see his own doctor. Such a policy consistently applied will reduce misuse to small proportions. That it is so large at present is an indication of our own failure.

SUMMARY

An analysis has been made of 992 new patients attending the accident and emergency department of the Royal Victoria Hospital in the last week of January 1970. In the light of the findings the question of the misuse of accident and emergency services is discussed.